

- WORK PLAN -

GYPSY MOTH MANAGEMENT  
ON THE WAYNE NATION FOREST, OHIO

General Planning Direction  
and  
Establishment of Gypsy Moth Monitoring During 1996  
on the Athens and Ironton Ranger Districts

by

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## INTRODUCTION

Currently in the United States, gypsy moth (GM), *Lymantria dispar* (Linnzens), populations are managed by eliminating isolated low-density infestations outside the generally infested Northeast United States and by suppressing high density populations in regulated areas within the Northeast. Concern for a number of economic, social and ecological criteria are generally paramount in decision making as to which of several management strategies are applicable. These strategies reflect the short-term goal of maintaining ecosystem outputs and generally utilizing only insecticides. In recent years, this approach has not always been satisfactory since current programs do not attempt to manage gypsy moth populations at low or building densities, but simply mitigate the problem of high population density outbreaks through direct suppression.

## GYPSY MOTH MANAGEMENT GOALS

Integrated pest management (IPM) provides an alternative long-term approach to resource protection against GM forest defoliation. Gypsy moth IPM can be considered to have two major components: 1) insect population management: 2) tree host management.

Under the first component, the goal is to maintain GM populations at innocuous levels and to prevent their buildup to levels which have a socio-economic impact. In order to achieve long-term population stability, it is essential to monitor the density, trends and quality of gypsy moth populations, to maximize natural controls, and to use artificial controls, when necessary, in an

integrated, compatible and environmentally acceptable manner. This plan speaks primarily to this first goal.

The integrated pest management (IPM) approach for managing GM which is to be implemented on the Athens and Ironton Ranger Districts of the Wayne National Forest is guided generally by results from the Appalachian Gypsy Moth Integrated Pest Management Pilot Project. This five-year project, begun in 1987, involves funding from the Forest Service, State and Private Forestry, Forest Pest Management in cooperation with West Virginia and Virginia. The goal of the Project has been to evaluate the feasibility of detecting, monitoring and managing GM populations at low densities within a multiple county area of the Appalachian Mountains and Plateaus where various ecological, geographical and land use areas exist.

The second goal of managing trees in stands most susceptible to defoliation and vulnerable to mortality, involves application of silvicultural guidelines designed to reduce tree mortality in advance of the first major gypsy moth defoliation, during an outbreak, and in the aftermath forest. These guidelines have been developed and published by the NEFES, Morgantown, WV. Concurrent with implementation of the first component of GM IPM, plans will be made in 1996 to identify stands on the Athens and Ironton RDs where these silvicultural guidelines can be implemented beginning in 1997.

#### INTEGRATED PEST MANAGEMENT OBJECTIVES

An IPM program for managing low density gypsy moth population will be implemented on the Athens and Ironton Ranger Districts National Forest. During

1996, the most susceptible compartments on these two Districts will be identified and monitored for various life stages of the gypsy moth. Concurrently, planning will be initiated to define criteria and thresholds for decisions on gypsy moth population management through various intervention strategies/tactics to prevent populations from building. Plans for preparing and environmental assessment for insecticides aerilly applied against high density populations in federal suppression projects will also be developed in 1996. The actual suppression activities would be implemented in years subsequent to 1996 should GM outbreaks occur.

#### ACTIVITIES IN 1996

There are four important operational aspects for managing pest populations under an IPM program: 1) survey and monitoring; 2) decision making 3) population management strategies/tactics including intervention and suppression; 4) evaluation of results. During 1996, a survey and monitoring network will be established on the Forest so that the distribution, abundance, and quality of the gypsy moth and the distribution and abundance of its natural enemies can be determined. Four monitoring techniques will be used: 1) male moth traps baited with pheromone; 2) larval and pupal sampling devices; 3) egg mass surveys if needed; 4) aerial defoliation surveys as part of the general aerial sketchmapping. Additional data about tree species composition for an assessment of forest stand vulnerability to gypsy moth related tree mortality, gypsy moth population trends, proximity to other infestations on surrounding non-Federal ownership, and resource values and uses potentially at risk from the gypsy moth

outbreak, also will be recorded throughout the monitoring network on the data form accompanying this work plan.

The survey and monitoring network to be established in 1996 will involve the placement of pheromone traps at 15 points throughout accessible portions of high risk susceptible oaks type based on vegetation maps in the northern portion of the Athens Ranger District of the Wayne NF. Three to five of these compartments will be grouped so as to follow the Opportunity Areas established under the Integrated Resource Management concept directed by the Forest Plan. This monitoring network also will include the sorting and collecting of larvae, pupae and egg masses beneath burlap bands placed on three preferred host trees at each trap point.

#### ACTIVITIES BEYOND 1996

As populations increase in subsequent years, egg mass and defoliation surveys will be made. Egg mass counts will be conducted within 1/40 acre plots located at each trap point and on individual groups of trees located in developed recreation areas. Detailed and accurate defoliation surveys will be made with color infrared aerial photography.

Depending upon gypsy moth population levels and distributions found within both Ranger Districts of the Wayne NF and surrounding non-Forest lands within the next few years, several intervention tactics designed to keep populations at low densities may be implemented at selected sites within the Wayne Forest.

These include: 1) release of GM pathogenic fungi, GM selected parasitic flies and

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wasps, and GM predator carabid beetles established elsewhere may be made in an attempt to establish them of the Wayne Forest earlier than normal; 2) the placement of Hercon Luretape GM, a pheromone-saturated luretape, to disrupt with mating of adult gypsy moths; 3) aerial application of undiluted Bacillus thuringiensis kurstaki (BTI) and Gypchek virus at developed recreation areas. Decisions about the use of intervention tactics will be made from survey data taken on the monitoring network within the high risk areas. Additional data from intervening locations, such as those as taken by Ohio Department of Agriculture personnel at any State and private communities nearby, may be used in making decisions. Pheromone traps, burlap bands and egg mass plots will be located at the same point within both Ranger Districts and monitored on the same schedule as used in 1996.

#### INTERVENTION TACTICS

Late in the 1990's low density GM populations are expected to become established over large portions of the northern portions of the Athen District of the Wayne NF, the egg parasite, Ooencyrtus kuvanne and the wasp larval parasites, Cotesia melanoscela (Korean strain), could be released at selected sites in an effort to expand the parasite complex present on the Wayne NF. Other parasitic species specific for gypsy moth larvae include already established species such as tachinid fly species, *Blepharipa pratensis*,

*Parasetigena gilis*, and promising species, such as *Blepbaripa schinera* and *Ceranthia saueusis*.

Hercon Luretape GM to disrupt male GM might be used at those locations where gypsy moth numbers indicate an expanding population and a resource value is at

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risk. Aerial application of BTI may be made to stands of trees where gypsy moth egg masses directives are above damage thresholds in and around such developed recreation areas as campgrounds and picnic areas.

#### SUPPRESSION TACTICS

The environmental impacts of aerial application of biological insecticides, such as BTI and Gypcheck, and chemical insecticides, such as Dimilin, will be analyzed for use only against high density populations which might develop in place or from blow-in, and then only where the highest resource values and uses are at risk. All requirements will be followed in the development of alternatives with full compliance with NEPA and the National Forest Plan, such that only environmentally safe, economically sound and biologically effective materials will be considered.